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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,268	07/18/2006	Yongkang Zeng	BP-00033 (C-54)	8698
58552	7590	04/29/2010	EXAMINER	
Dr. BANGER SHIA			CHRISTIANSEN, JANIE MEREDITH	
Patent Office of Bang Shia				
102 Lindencrest Ct.			ART UNIT	PAPER NUMBER
Sugar Land, TX 77479-5201			3751	
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			04/29/2010	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/597,268	ZENG, YONGKANG
	<b>Examiner</b>	<b>Art Unit</b>
	JANIE CHRISTIANSEN	3751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 18 July 2006.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-10 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-10 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 18 July 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “switch valve and filter mesh” in line 2 of claim 5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 1- 10 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. The following are a few examples that require correction: in claim 2, line 5, "close" should be rewritten as --closed--. In claim 5, line 2, after the word wherein and before the word switch, --a-- should be inserted. In claim 5, line 2, "be" should be removed. In claim 9, line 2, "is" should be rewritten as --are--.

5. Regarding claim 1, line 4, "the water flowing the respective water curtain controlling devices" is unclear. It is unclear if the water is flowing through the respective devices or adjacent to the devices. For the purpose of examination, it is best understood that the temperature regulating device controls water flowing through the curtain controlling devices. Claims 2 - 10 will inherit the same issue since they depend from the rejected claim.

6. Regarding claims 3 and 10, the claim as drafted appears to be incorrect. According the specification, water is suctioned via the pump into a first pipe through a first set of holes and then spurted out of a second pipe through a second set of holes (fig. 2). Claim 3 only calls for one pipe and one set of holes, and thus it appears that the water is both suctioned and then spurted back out the same set of holes. For the

purpose of examination it is best understood that two pipes are being claimed, a first pipe with a first set of holes for water to be suctioned through and a second pipe with a second set of holes for water to be spurted out. Claim 4 will inherit the same issue since it depends from the rejected claim.

7. Regarding claim 4, the holes are “vertical to water surface” in lines 2 – 3 is unclear. For the purpose of examination, it is best understood that the holes are parallel to the water surface and that the water curtain formed by water ejecting from the holes is vertical to the water surface.

8. Regarding claim 6, claim 6 recites the limitation "the pipes" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. **Claims 1 – 4 and 8 - 10 are rejected under 35 U.S.C. 103(a)** as being unpatentable over US Patent 3,460,166 (hereinafter Weber) in view of US Patent 3,693,953 (hereinafter Michel).

11. Regarding claim 1, Weber shows a temperature difference pool (fig. 1). The pool is filled with water and has a plurality of plastic curtains (1) arranged in the pool to create different temperature zones within a single swimming pool (fig. 1, 2). There is a

temperature regulating system (note fig. 6, col. 2, lines 28 - 65) for controlling the temperature of the water in the zones.

12. Weber shows physical plastic curtains (10) and fails to show water curtain controlling devices. Attention is turned to Michel which teaches using "liquid curtains" to control and separate temperatures within a body of liquid in a tank so that objects may pass freely from one area of the tank to another without having to encounter a physical barrier (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a water curtain instead of a plastic curtain in order to allow users to easily access any area of the swimming pool as evidenced by the teachings of Michel. Through incorporating the water curtain devices into the pool of Weber, the temperature regulating system would naturally regulate the temperature of water in the devices as well since the devices draw water from the pool.

13. Regarding claims 2 – 4 and 8, Michel shows the water curtain controlling devices (20) are spaced apart, having two pipes (20, 25) with a series of holes (21, 26) formed in the top surface of the pipes (fig. 1, 2). The holes (21) go the length of the pipe and are parallel to the pool surface. The pipes (20, 25) have a closed end and a second end connected to pumps (29, 45) (fig. 1).

14. Michel shows the pipes (20, 25) adjacent one another but fails to show the pipes juxtaposed and placed on the bottom of the pool. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fix the pipes on the bottom of the pool floor since one of ordinary skill in the art would place the pipes in the most convenient location depending on the desired temperature zones and structure of

the pool. When the entire pool needs to be maintained at different temperatures, one of ordinary skill would locate the curtain controlling devices on the bottom of the pool.

Additionally, depending on the size of the pool it would be most convenient to have the pipes juxtaposed instead of perpendicular to fit the pipes within the pool. Regardless of the location of the pipes, the water will still be suctioned out of the pool and circulated back through pipes to produce a water curtain.

15. Regarding claims 9 and 10, Michel fails to shows an inner pipe with a smaller diameter with a series of intermittent holes located on the bottom of the inner pipe for water to be suctioned by the pump into the inner pipe to be circulated through the pump and back out a second inner pipe to be expelled via the outer pipe holes in the outer pipe and into the pool. However, whether a single pipe or one pipe nested within another is used to circulate the water fails to alter or improve the function of creating water curtains. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select any reasonable number of pipes for circulating the water, and using a second inner pipe is considered a design choice not patentably distinguishable over the prior art. The disclosure fails to suggest any advantage for one embodiment over the other and only shows that the two embodiments perform the same function of creating water curtains through suctioning water through the outer pipe holes and ejecting the water through the outer pipe holes. Therefore, one of ordinary skill in the art would reason that either method functions equally well and is thus considered a design choice.

16. **Claim 5 is rejected under 35 U.S.C. 103(a)** as being unpatentable over Weber and Michel as applied to claim 2 above, and further in view of US Patent 3,781,925 (hereinafter Curtis).

17. Regarding claim 5, the combination of Weber and Michel shows all in the instant invention as claimed as set forth above in pp. 11 - 14, but Michel fails to show a switch valve and filter mesh arranged between the water curtain controlling devices and the pump to reverse the circulation flow. Attention is turned to Curtis which teaches using a switch valve within a pool for selectively controlling the circulation of water between a spa and swimming pool to regulate the temperature (col. 3, lines 1 – 4). Furthermore, Curtis shows using a filter to prevent debris buildup in the circulation system (col. 4, lines 19 - 24). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a switch valve and filter in the curtain controlling devices of Michel in order to control flow and maintain sanitary conditions within the pool system.

18. **Claims 6 – 7 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Weber and Michel as applied to claim 1 above, and further in view of US Patent 7,296,308 (hereinafter Turner).

19. Regarding claims 6 – 7, the combination of Weber and Michel shows all in the instant invention as claimed as set forth above in pp. 11 - 14, but Michel fails to disclose the material the pipes are made from. Attention is turned to Turner which teaches that it is well known in the art to use PVC (i.e. plastic) piping for circulating water within a pool (col. 4, line 40). Therefore, it would have been obvious to one having ordinary skill in

the art at the time the invention was made to use PVC plastic for the pipes of the curtain controlling devices of Michel in order to provide a cost effective, reliable system since such a material is known in the art for use in piping within pools.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANIE CHRISTIANSEN whose telephone number is (571)270-5208. The examiner can normally be reached on M-F 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JC/  
April 19, 2010

/Gregory L. Huson/  
Supervisory Patent Examiner, Art  
Unit 3751

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